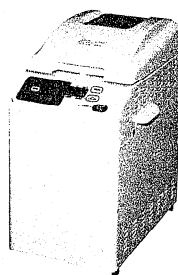


HITACHI**SERVICE MANUAL****NH No. 105E****HB-E303****A.C. 120V-60Hz****CONTENTS**

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SPECIFICATIONS

Description	Hitachi Automatic Home Bakery
Model	HB-E303
Rating	A.C. 120V
Heater	600W
Fan Motor	10W
Mixing Motor	120W
Capacitor	14 μ F (220V AC)
Dimensions	21.6cm (W) X 31cm (D) X 37.4cm (H)
Weight	Approx 7.2kg
Timer	4 hours and 20 minutes to 13 hours digital timer for baking reservation
Cord	P.V.C cord
Thermal Fuse	356°F (172°C)
Accessories	Measuring Cup, Measuring Spoon
Lot No.	Indicated on the bottom with permanent ink.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE TO IMPROVEMENT.

AUTOMATIC HOME BAKERY**SEPTEMBER 1995 HITACHI HOMETEC, LTD. KASUKABE WORKS**

OUTLINE OF STRUCTURE

A detachable bread pan is mounted on the center of this bakery. Projected from the bottom center of the bread pan is a rotary shaft to which a detachable mixing blade is attached. A bearing assembly is located under the bread pan and it is mounted on the chassis. The mixing motor is mounted on the chassis on the front side, its driving power is transmitted to the mixing blade inside the bread pan via a pulley, and a belt. The steel case is flanked around the bread pan and it forms a heating chamber.

A heater extends from the bottom. A casing is provided on the outside of the latter side wall, and the fan inside the casing is driven by the fan motor to blowing cool air.

A bread pan temperature sensor is provided on the bottom of heating chamber; it remains in contact with the bottom of bread pan, and senses the temperature of a dough in the bread pan. The heater, mixing motor and fan motor are controlled by the above sensor output and a micro-computer in the control panel on the front top of bakery.

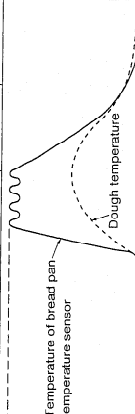
The bakery itself is enclosed with plastic and steel sheets, and a detachable lid is placed on its top.

Major Features

- 1 A large baking capacity of one, one-half and two pound.
- 2 Over heater assures even and fine baking.
- 3 You can choose the 5 steps crust color from light to dark.
- 4 The bread maker let you have delicious fresh bread every morning by using the built-in 13 hr. timer operation.
- 5 Quick baking function enables you to bake bread in 2 hours and 50 minutes.
- 6 Backup function maintains the baking condition for about 30 seconds in case of power failure.
- 7 With large window to view the making operation.

BASIC OPERATION

■ Bread/MIX Bread

Process	Pre-knead	Knead 1	Rest	Knead 2	First rise	Gas squeezes out	Second rise	Bake	Cool	Warm		
Time	3min.	6min.	5min.	16-22sec.	60 ~ 70min.	20sec.	70min.	63-68min.	10-19min.	60min.		
Approx. 130°C ~ 155°C												
Temperature curve for making bread												
30°C												
Process indicator	KNEAD light on				RISE light on				BAKE light on	FINISH light flashes	FINISH light on	
Heater	OFF				ON/OFF				OFF			
Mixing motor	ON/OFF	ON	OFF	ON	OFF	ON/OFF	OFF					
Fan motor	OFF				ON/OFF				ON/OFF			
Microcomputer control	Microcomputer selects preprogrammed suitable kneading time and bread pan temperature. Microcomputer operates the mixing motor regularly to make a even dough.				Rise				Bake			
									Finish			
					The micro-computer controls the temperature suitable to baking breads at your choice.					Fan cools the bread to suitable temperature after baking. After baking process ventilating fan will run intermittently, and ventilating fan little chattered. This sound is running noise. (Ventilating fan will stopped after 30 min.)		

Control of BREAD RAPID Course

This course is a shorter course, for bread according to increased volume of yeast.

Process	Pre-Knead	Knead 1	Rest	Knead 2	First rise	Gas squeeze out	Second rise	Bake	Cool	Warm
Timer	3min.	6min.	5min.	16-20 min.	15min.	20sec.	45min.	65min.	10-14 min.	60min.
Heater	OFF			ON/OFF						
Mixing motor	ON/OFF	ON	OFF	ON	OFF	ON/OFF	OFF			
Fan motor	OFF			ON/OFF	OFF		OFF	ON/OFF	ON/OFF	OFF

Control of WHOLE WHEAT BREAD Course

Process	Pre-Knead	Knead 1	Rest	Knead 2	First rise	Gas squeeze out	Second rise	Bake	Cool	Warm
Timer	1min.	10min.	40min.	14min.	26min.	20sec.	70min.	55min.	13min.	60min.
Heater	OFF			ON/OFF						
Mixing motor	ON/OFF	ON	OFF	ON	OFF	ON/OFF	OFF			
Fan motor	OFF			ON/OFF	OFF		ON/OFF	OFF	ON/OFF	ON/OFF

Control of DOUGH Course

It operates till the first rise in Bread course and beeping sounds to tell you the finish

Control of CAKE 1 (Sponge Cake) Course

Process	Pre-heating	Bake	Cool
Timer	7min.	48min.	20min.
Heater	ON/OFF		OFF
Mixing motor	OFF		
Fan motor	OFF		ON

Control of CAKE 2 (Pound Cake) Course

Process	Pre-heating	Bake	Cool
Timer	7min.	58min.	20min.
Heater	ON/OFF		OFF
Mixing motor	OFF		
Fan motor	OFF		ON

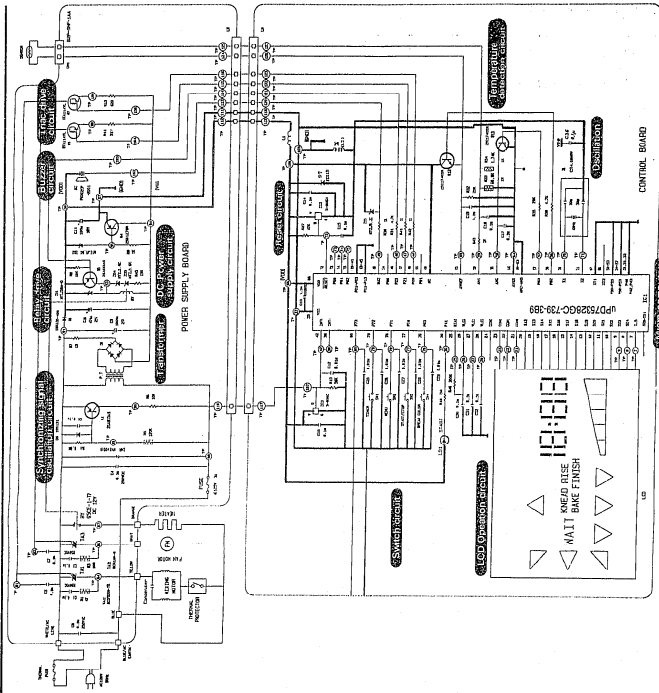
Control of JAM Course

Process	Pre-heating	Bake	Finish
Timer	15min.	50min.	5min.
Heater	ON/OFF		OFF
Mixing motor	OFF	ON/OFF	
Fan motor	OFF		ON

Control of PIZZA (dough) Course

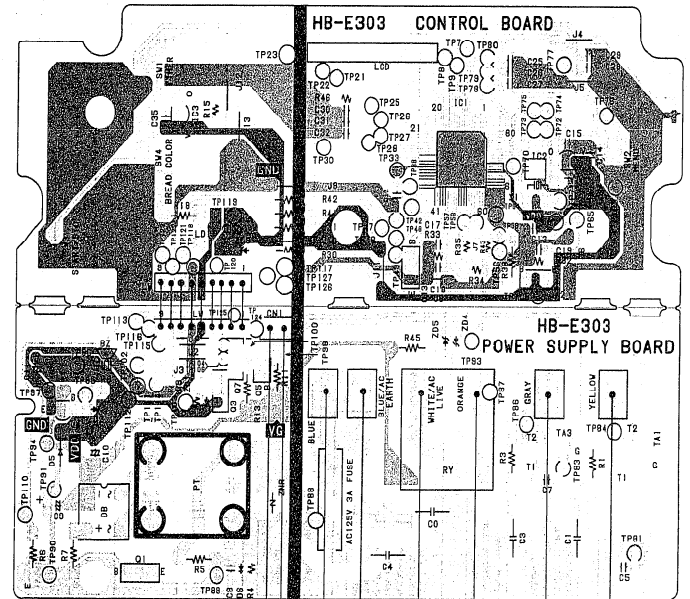
Process	Pre-knead	Knead 1	First rise	Knead 2	Second rise
Timer	3min.	20min.	10min.	10min.	10min.
Heater	OFF	ON/OFF			
Mixing motor	ON/OFF	ON	OFF	ON	OFF
Fan motor	OFF			ON/OFF	OFF

CONTROL CIRCUIT DIAGRAM

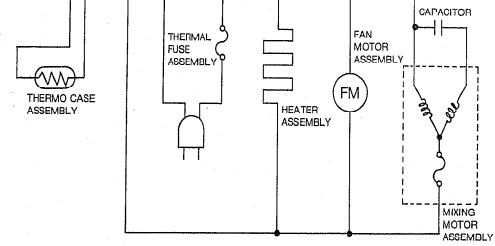


WIRE CONNECTION DIAGRAM

This is the wire connection diagram which you see from the copper coating side on the board.



- VDD
- VG
- GND
- Other

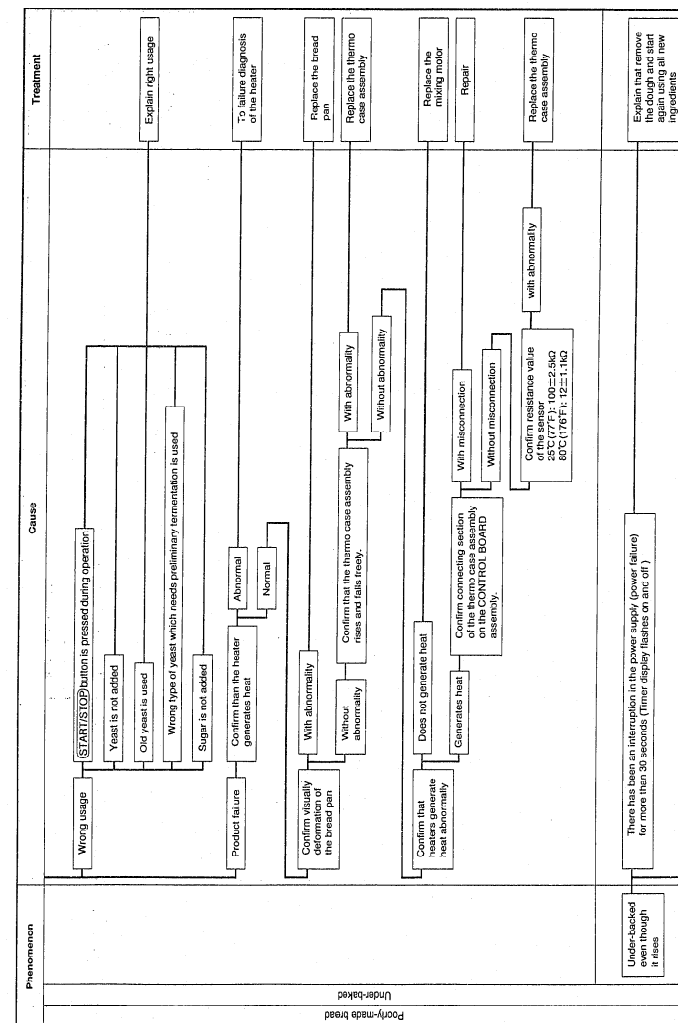
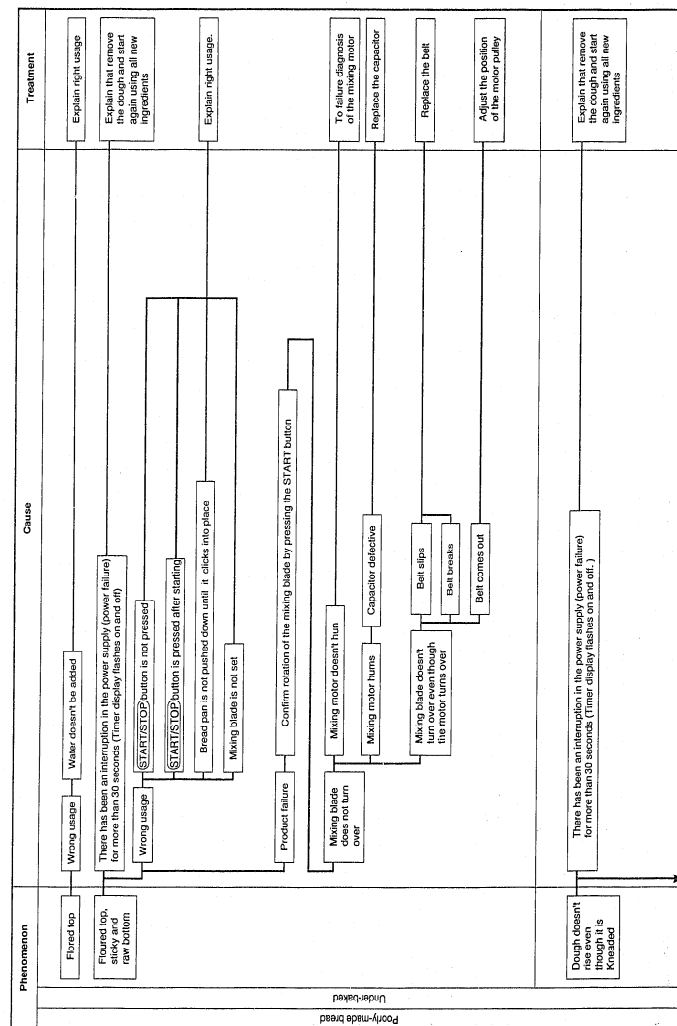


TROUBLESHOOTING LIST

■ Failure Diagnosis other than Circuit Board Assembly

Phenomenon	Cause	Treatment
A fuse of the safety device of the house is blown.	Confirm conductivity between both edges of plug by tester With conductivity. The resistance value is almost zero. (There is short circuit.) With conductivity. The resistance value is approx. 10Ω. Confirm visually short circuit and correct installation and connection sections of cord and inside lead wire Without abnormality With abnormality Short circuit in the cord, even if circuit is the plug When the cord assembly is not abnormal Short circuit of the section of the cord assembly is not abnormal	Repair Replacement Repair
Does not operate	Power failure Confirm contact of connection sections of cord inside lead wires, etc. in the unit by pulling them. Without abnormality With abnormality (Looseness of screw and factor terminal, etc.) Without conductivity Broken line in the cord. Defective contact in the plug Without conductivity Confirm visually contact between plug edge and plug socket. With abnormality Confirm the plug socket too Consult with the service shop when there is abnormality Without abnormality Thermal fuse is defective Without conductivity Confirm conductivity of the thermal fuse assembly With conductivity CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.	Replace the cord assembly Repair Replace the thermal fuse To failure diagnosis of the circuit board

Phenomenon	Cause	Treatment
Mixing motor does not turn over	Confirm contact of connection sections of lead wires of the mixing motor in the unit by pulling them Without conductivity Confirm conductivity between (YELLOW) terminals and (BLUE) terminals of the mixing motor Without conductivity Broken wire of the mixing motor With conductivity CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.	Repair Replace the mixing motor To failure diagnosis of the circuit board
Fan motor does not turn over	Confirm contact of connection sections of lead wires of the fan motor in the unit Without conductivity Confirm conductivity between (GRANITE) terminals and (BLUE) terminals of the fan motor Without conductivity Broken wire of the fan motor With conductivity Turn the fan motor by your hand Does not turn over Seizure of the bearing Turns over CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.	Repair Replace the fan motor Replace the fan motor To failure diagnosis of the circuit board
Heater does not generate heat	Confirm contact of connection sections of lead wires of the heater in the unit by pulling them Without conductivity Confirm conductivity between (GRANITE) terminals and (BLUE) terminals of the heater assembly Without conductivity Broken wire of the heater With conductivity CONTROL BOARD assembly and POWER SUPPLY BOARD assembly are defective.	Repair Replace the heater To failure diagnosis of the circuit board

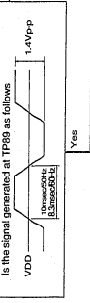
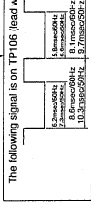


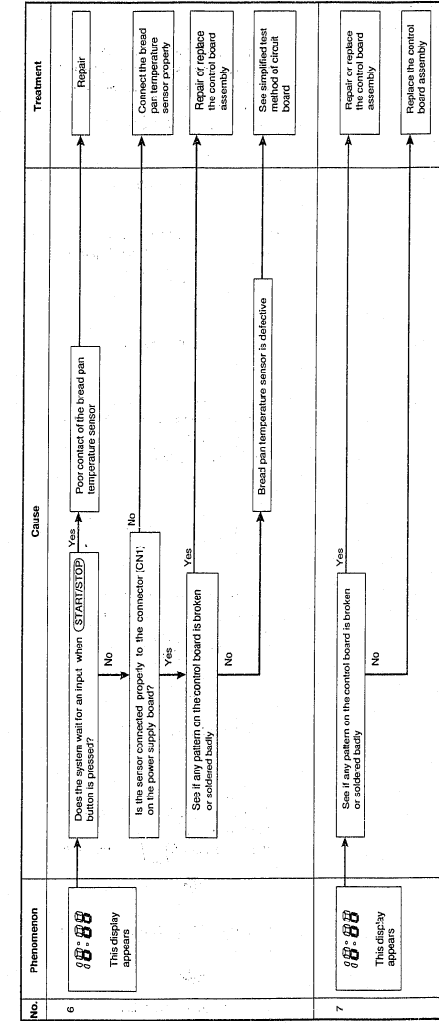
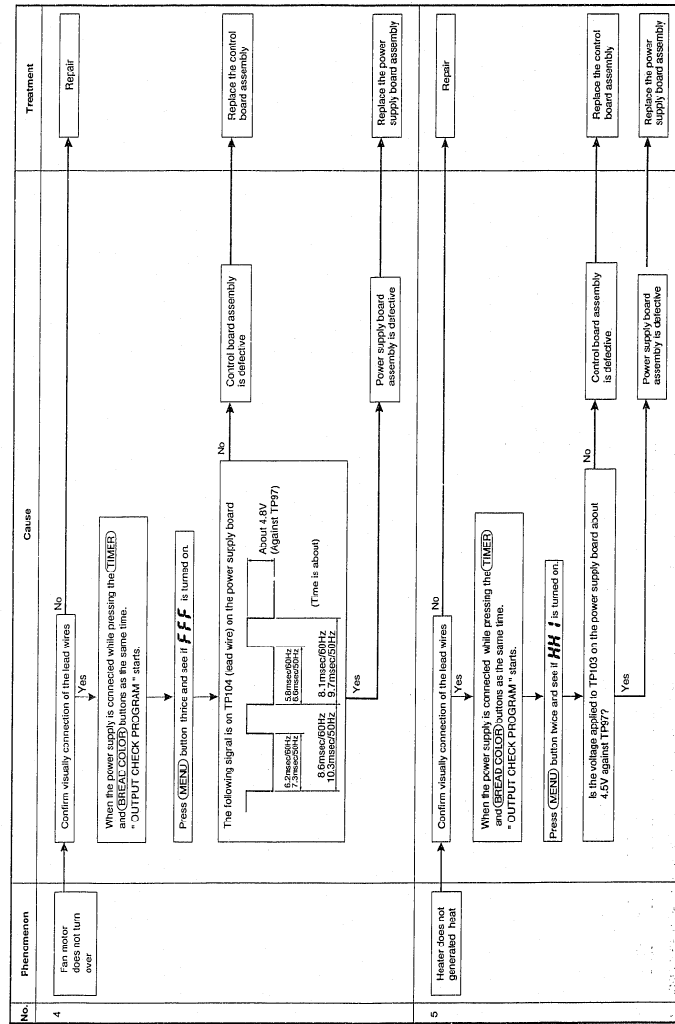
Phenomenon	Cause	Treatment
Under-baked	Wrong usage START/STOP button is pressed during operation. (Only BREAD LCD is turned on) Product failure Confirm that only BREAD LCD is turned on when the plug is inserted into a wall outlet. Does not turn on With abnormality Without abnormality Confirm that the assembly is blown or not Wrong abnormality With abnormality Without abnormality CONTROL BOARD assembly and/or power SUPPLY BOARD assembly are defective	Explain right usage Replace the thermo case assembly To failure diagnosis of the circuit board of the heater To failure diagnosis of the heater To failure diagnosis of the circuit board
	Wrong usage Flour is not enough Old flour is used Wrong type of flour is used Yeast is not enough Old Yeast is used Wrong type of yeast which needs preliminary fermentation is used Sugar is not enough Sugar is not added Water is not enough Confirm the resistance value of the bread pan temperature sensor 25°C (77°F): 100±2.5kΩ 50°C (122°F): 12±1.1kΩ With abnormality Without abnormality Bread pan temperature sensor is defective CONTROL BOARD assembly and/or POWER SUPPLY BOARD assembly are defective	Explain right usage Replace thermo case assembly sensor To failure diagnosis of the circuit board
Poorly-made bread	Wrong usage Top inflated Flour is added too much Yeast is added too much Sugar is added too much	Explain right usage
	Wrong usage Top inflated Flour is added too much Yeast is added too much Sugar is added too much	Explain right usage

Phenomenon	Cause	Treatment
Baked	Product failure Confirm the resistance value of the bread pan temperature sensor 50°C (122°F): 12±1.1kΩ With abnormality Without abnormality	Replace the thermo case assembly To failure diagnosis of the circuit board
	Wrong usage Water is added too much	Explain right usage
Poorly-made bread	Wrong usage Flour is not added enough The others	Explain right usage Explain as follows. The bread is not made properly. It differs depending on the condition of gas sequence out.
	Wrong usage Bread is sliced just after taking	After cooling the bread, cut it with a bread knife
Slices unevenly and is sticky	Wrong usage Ingredients or crumbs are spilled on the heater or oven area	Explain as follows. After cooling the bread, cut it with a bread knife
Smoke emitted from openings	Wrong usage Ingredients or crumbs are spilled on the heater or oven area	Explain as follows. After cooling the bread, cut it with a bread knife
Heater is heated from oven area after making bread is finished	Circuit board failure	To failure diagnosis of the circuit board

Phenomenon	Cause	Treatment
Plug is overheated	Poor contact of connector plug	Replace the cord assembly
Electric shock	Confirm visually damaged insulation cover of cord and lead wire With abnormality, there is contacting part Without abnormality Remove all screws soldered joints and lead terminals connecting cord and lead wire. Measure insulation resistance of the cord. Defective insulation for lower than 1MΩ.	Replacement Repair, if possible
 The display appears	Circuit board failure	To failure diagnosis of the circuit board
 The display appears	Bread pan temperature sensor failure Confirm visually connection of bread pan temperature sensor With abnormality Without abnormality	Repair To failure diagnosis of the circuit board

■ Diagnosis of Failures of Circuit Board (See if any circuit board, pattern or component is broken in advance)

No.	Phenomenon	Cause	Treatment
1	Not operating	Is voltage at the primary (in indicated side) of the transformer? No Yes The TP91 voltage is about 17V against TP94 No Yes The TP96 voltage is about 3V against TP97 No Yes Is the signal generated at TP99 as follows  Yes	Check the IC chips and the tab terminals Replace the power supply board assembly
2	Wrong LED and LCD turned on	Any broken pattern or mis-soldering on the circuit board. Yes No	Replace the control board assembly Repair or replace the control board assembly Replace the control board assembly
3	Mixing motor does not turn over	Confirm visually connection of the lead wires Yes No When the power supply is connected while pressing the TIMEB and BREED COLOR buttons at the same time: "OUTPUT CHECK PROGRAM" starts. See if LL is turned on by pressing BREED button The following signal is on TP106 (lead wire) on the power supply board  About 4.6V (Against TP97) (Time is about 10.3-10.6559Hz, 9.77ms±59Hz)	Repair Replace the control board assembly Control board assembly is defective Power supply board assembly is defective Replace the power supply board assembly



SIMPLIFIED TEST

Simplified Test Method of Mixing Motor, Fan Motor, Heater.

Insert the power plug while pressing both the (TIMER) and (BREAD COLOR) buttons.

As the "OUTPUT CHECK PROGRAM" is initiated by the above operation, press the (MENU) button successively, and see if the mixing motor, fan motor and heaters are properly powered or not.
The "OUTPUT CHECK PROGRAM" runs in the items from 1 to 5 on the right side of this page.

1. Mixing motor intermittently powered.
The mixing motor is powered in a cycle of switching on for 0.1 sec, and switching off for 0.9 sec.
The LCD display **LL** flickers.



Press the (MENU) button

2. Mixing motor powered continuously.
The mixing motor is continuously powered.
The LCD display **LL** remains on.



Press the (MENU) button.

3. Heater powered.
The mixing motor is switched off and the heater is powered.
The LCD display **HH** is turned on.



Press the (MENU) button.

4. Fan motor powered continuously.
The heater is switched off and the fan motor are powered.
The LCD display **FFF** is turned on.



Press the (MENU) button.

5. Full output
The mixing motor, fan motor and heater are all powered.
The LCD display **ALL** is turned on.



Press the (START/STOP) button for two seconds.



This program is canceled.

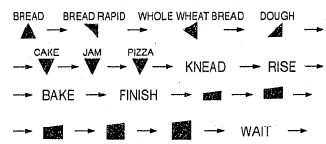
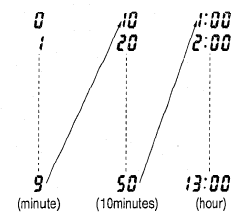
Simplified Test Method of Circuit Board.

Insert the power plug while pressing both the (TIMER) and (MENU) buttons. (for the power plug insertion see Simplified Test Method. (page 18)) The "SELF-DIAGNOSIS PROGRAM" is initiated. Press the (MENU) button successively, and see if the board is properly operating.

The "SELF-DIAGNOSIS PROGRAM" runs in the following sequence.

Process	Operation	Transfer condition
1	" BREAD RAPID " LCD " BREAD/MIX BREAD " are turned on. WHOLE WHEAT BREAD DOUGH CAKE JAM PIZZA	Proceed (MENU) button to proceed to next step.
2	LCD " KNEAD RISE " are turned on. BAKE FINISH	Proceed (MENU) button to proceed to next step.
3	LCD " " are turned on.	Proceed (MENU) button to proceed to next step.
4	LCD " WAIT " is turned on.	Proceed (MENU) button to proceed to next step.
5	Timer LCD " 18:88 " are turned on.	Proceed (MENU) button to proceed to next step.
6	LED " START " is turned on.	Proceed (MENU) button to proceed to next step.
7	Display of frequency appears 50Hz... " 50 " is turned on. 60Hz... " 60 " is turned on.	Proceed (MENU) button to proceed to next step.
8	Timer LCD " E33 " is turned on.	Proceed (MENU) button to proceed to next step.
9	Timer LCD " 000 " is turned on.	Proceed (MENU) button to proceed to next step.
10	Buzzer buzzes.	Proceed (MENU) button to proceed to next step.
11	Mixing motor operates.	Proceed (MENU) button to proceed to next step.
12	Fan motor operates.	Proceed (MENU) button to proceed to next step.
13	Heater heats operates.	Proceed (MENU) button to proceed to next step.
14	The following timer LCD displays are turned depending on the detected temperature. -5°C T < -5°C : 1 10°C T < 10°C : 2 20°C T < 20°C : 3 26°C T < 26°C : 4 30°C T < 30°C : 5 36°C T < 36°C : 6 38°C T < 38°C : 7 38°C T < 46.5°C : 8 46.5°C T < 47°C : 9 47°C T < 60°C : 10 60°C T < 140°C : 11 140°C T < 155°C : 12 155°C T : 13 (0 is display if the sensor is kept open, or 14 if it is shorted.)	- Proceed to process 15 when the (MENU) button is pressed. - This self-diagnosis program is canceled when the (START/STOP) button is pressed for two seconds.

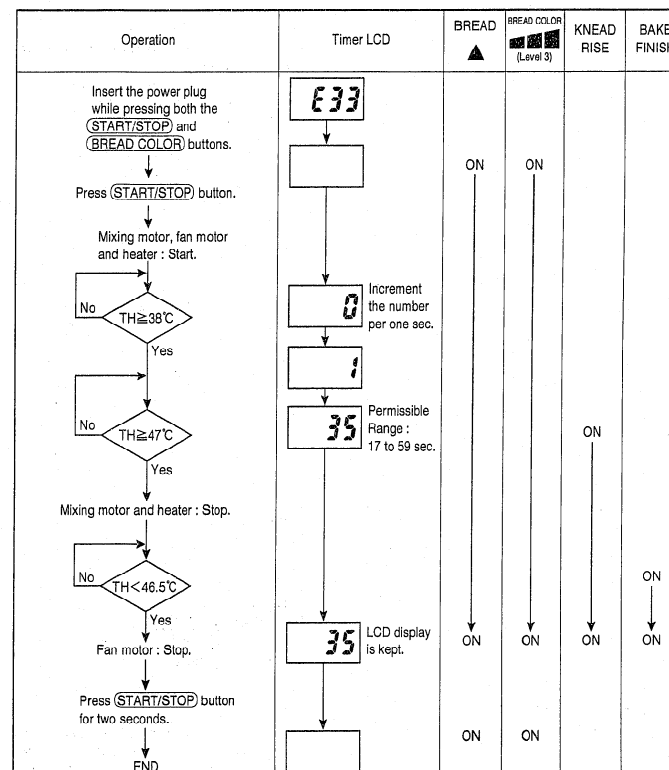
Note : Press the (START/STOP) button for two seconds at the finish of above the test.

Process	Operation	Transfer condition
15	Turn on the LCD display in order  per 0.3 seconds.	Total 5.1 seconds.
16	Turn on the LCD display in order  per 0.3 seconds.	Total 8.4 seconds.
17	LED "START" is turned on.	0.3 seconds.
18	All the LCD display and LED are turned on. 	Operation returns to process 1 when the (MENU) button is pressed. This self-diagnosis program is canceled when the (START/STOP) button is pressed for two seconds.

Note : Press the (START/STOP) button for two seconds at the finish of above the test.

Heat Run Test Method

Insert the power plug while pressing both the (START/STOP) and (BREAD COLOR) buttons. (for the power plug insertion see Simplified Test Method. (page 18))
 The "HEAT RUN PROGRAM" is initiated.
 Press the (START/STOP) button.
 The "HEAT RUN PROGRAM" runs in the following sequence.



NOTES :

- The incremented numbers could be changed under ambient temperature.
- If the incremented number was not within 17 to 59, check again this heat run test after cooling down the unit.
These incorrect number is mainly caused by incorrect putting the bread pan. If the re-checked number was not within 17 to 59, check to ensure that bread pan has been contacted with sensor cup.
- The correct incremented numbers are based on the following conditions. Ambient Temperature : 15°C to 25°C.

PROCEDURES FOR DISASSEMBLY AND REPAIR

Pay Attention to the Following at Service and Inspection

(1) protect against electric shock

Before starting the servicing or checks, ALWAYS disconnect the plug to protect against electric shock. DO NOT touch any live component when servicing or checking the powered bakery.

(2) Restore original conditions of components and wire layout

For safety protection the insulated tubes are used and the wirings are separated by bundlings away from the heated and detachable components. To mount these insulated components and bundled wirings, be sure to replace them on their original positions.

Guide to Repair

(1) In case of defective sensor

Measure the resistance of any defective sensor to determine it is defective.

(2) The positive locks are attached to all the fasten terminals.

The terminals enclosed with housings can be pulled out by holding the housings. The terminals without housings can be pulled out by unlocking the locks with fingertips. Make sure the terminals are properly locked after inserting them into the locks.

Procedures for Disassembly

The bracketed figures correspond to the numbers shown in the Service Parts List.

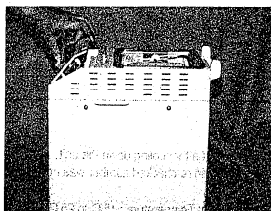
(1) Replacement of lid assembly

(a) Lift up the lid assembly at above 45°, and pull it askew toward you.

(b) Place the lid assembly with its inside facing upward, remove four screws ② from the inner lid ②. Then insert a ⊖ driver into the gap between the inner lid ② and the outer lid ⑦, and remove the inner lid ②.

(2) Replacement of panel assembly

(a) Remove the screw ⑪.



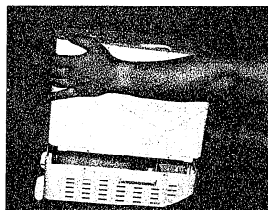
(b) Insert a ⊖ driver into the gap between the panel assembly ⑪ and the upper outer case ⑫, pull out the panel with the power board assembly ⑬ and the control board assembly ⑭ mounted on the panel assembly ⑪.

(c) Remove the plug socket terminals from the power board assembly ⑬ and the screw ⑮ from the panel assembly. Then disconnect the power supply board assembly ⑬ and the control board assembly ⑭.

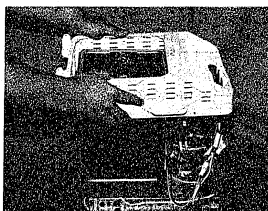
(3) Replacement of Outer case (mixing motor, condenser, thermal fuse assembly)

(a) Place the body upside down, and remove screws from the rubber feet ⑬. Remove four screws ⑯ from the bottom plate ⑭. The bottom plate ⑭ can be removed.

(b) Remove the screws ⑯, which secure both the upper and under outer cases ⑮, ⑯. The under outer case ⑯ can be removed.



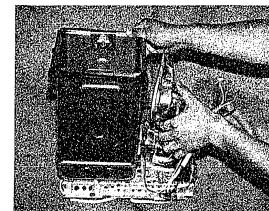
(c) Replace the body in place, remove the screw ⑰, then the upper outer case ⑮ can be removed.



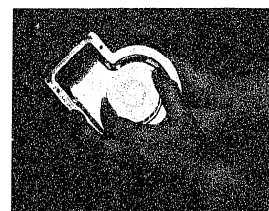
(d) Remove the screw suitably remove the lead wires from these the mixing motor ass'y ⑱, the condenser ⑲, the thermal fuse assembly ⑲ can be removed. Remove the lead wires from these components if necessary.

(4) Replacement of fan assembly / fan motor

(a) Remove the screws ⑳ securing the casing ㉑ on the inner case body ㉒ on the chassis ㉓.



(b) Pull out the fan ass'y ㉔ and remove the screws ㉕, the fan motor ㉖, and the fan assembly ㉗ can be removed.

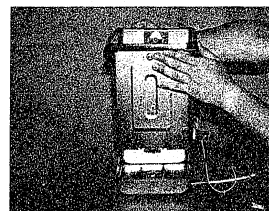


(5) Replacement of heater assembly

(a) Remove the four screws ㉘ securing the inner case bottom ㉙ on the bearing assembly.

(b) Remove the screw ㉚ and the insulator (2) ass'y ㉚. Remove the screw ㉛, the heater ass'y ㉛ and insulator (A) ㉛ can be removed from inner case ass'y.

(c) Remove the claw of inner case body ㉜ inserted into the inner case bottom ㉙, and pull out the inner case body ㉜.



(6) Replacement of bearing assembly

(a) Remove the belt ㉝ and the M6 hexagon nut securing the pulley ㉞. Then the pulley ㉞, the M6 washer and the hold plate assembly ㉟ can be removed.

(b) Remove the #8U type washer and the thrust washer ㊱. Then pull up the shaft assembly ㊱. (Take care of the bearing when pull out the shaft.)



(c) Remove three screws ㊱ securing the bearing assembly ㊱ on the chassis ㉓, and pull out the bearing assembly ㊱.

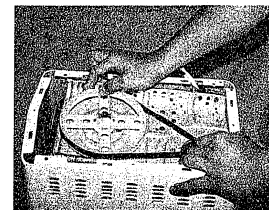
Procedures for Assembly

The disassembled bakery can be re-assembled in the reverse way, but the following cautions should be taken in its assembling.

(1) Installation of mixing motor

(a) pull the mixing motor ㉔ shaft strongly toward the output side before putting the belt ㉝ on the shaft. The belt ㉝ comes off easily if the shaft is drawn opposite to the output side.

(b) Adjust the position of the motor pulley ㉞ for the belt ㉝ to revolve in the center of pulley ㉞.



(c) Make sure the projections on the belt ㉝ are inserted in the groove of the motor pulley ㉞.

(2) Installation of thermal fuse assembly

Mount the thermal fuse assembly ② in the way that its fuse holder come in contact with the walls of the inner case body ⑪ by screw ⑥.

(3) Installation of heater assembly

Make sure the lock screws ⑩ of the heater assembly ④ are not clamped so tight in its assembling as to crack or damage the insulators ③.

(4) Installation of thermo case assembly

The thermo case assembly ⑦ must be able to rise and fall freely through the opening of the thermo cover ⑧.

(5) Installation of bread pan assembly

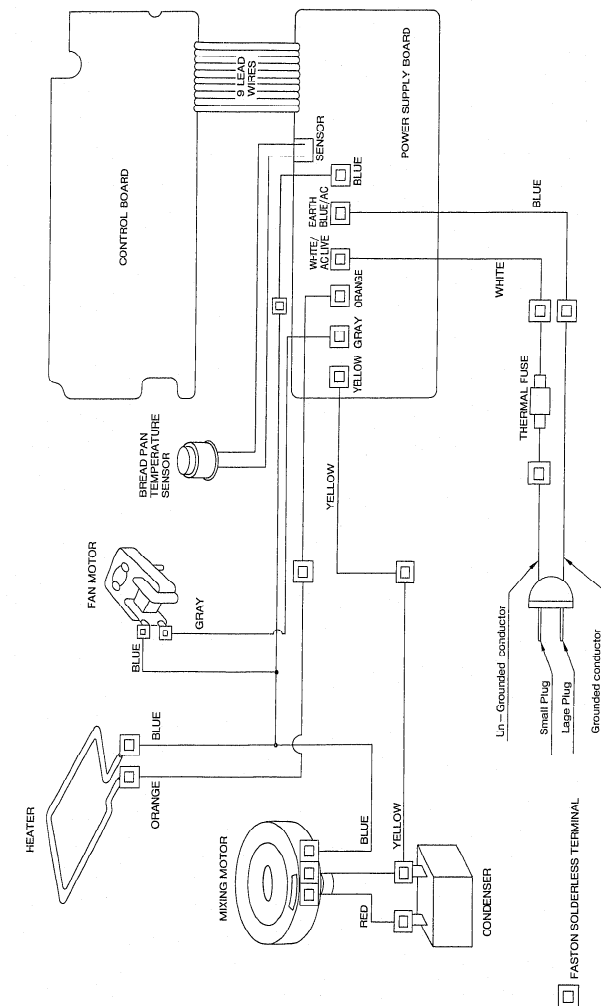
See if the bread pan assembly ⑤ loaded on the bakery does not allow a play between the hold spring ② on its both walls, and it is secured in place.

SERVICE PARTS LIST**■ HB-E303 (120V EDISON PLUG)**

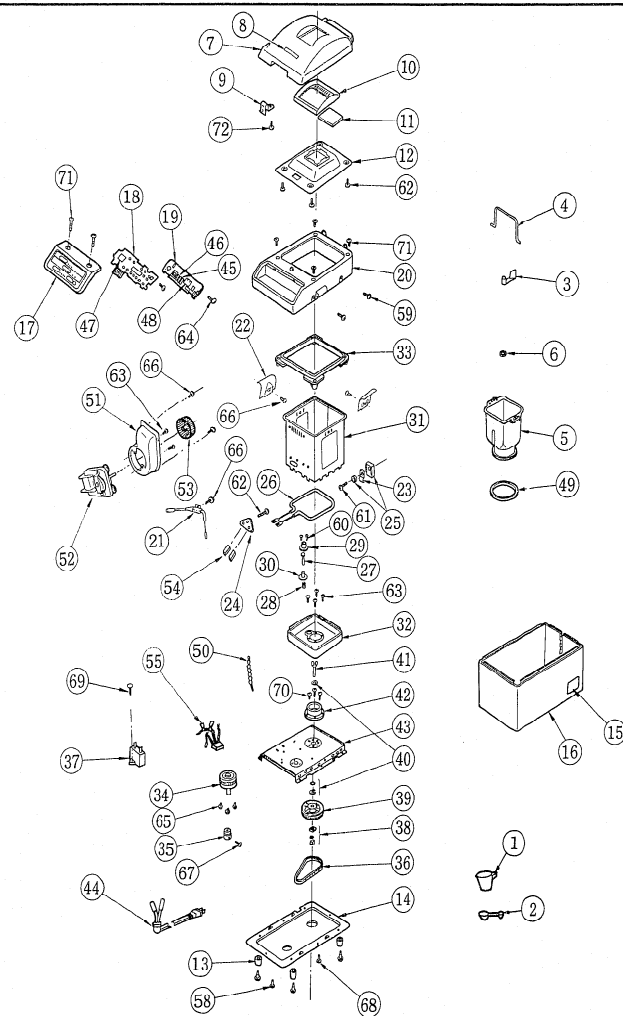
No.	Description	Parts No.	Q'ty	Remarks
1	Measuring Cup	HB-B102 901	1	
2	Measuring Spoon	HB-B102 902	1	
3	Mixing Blade	HB-B301 901	1	
4	Handle	HB-B2 503	1	
5	Bread Pan Ass'y	HB-E303 901	1	Including the No.6 (Packing Ass'y)
6	Packing Ass'y	HB-B100 927	1	
7	Lid (WH)	HB-E303 902	1	
8	Caution Label	HB-C103 903	1	
9	Lock Spring	HB-B2 507	1	
10	Window Frame	HB-E303 903	1	
11	Viewing Window	HB-C103 905	1	
12	Inner Lid	HB-E303 904	1	
13	Rubber Foot Ass'y	HB-A100 905	2	With foot screws
14	Bottom Plate	HB-B100 904	1	
15	Name Plate Label	HB-E303 905	1	
16	Under Outer Case (WH)	HB-B102 906	1	
17	Panel Ass'y (WH)	HB-E303 906	1	
18	Control Board Ass'y	HB-E303 907	1	
19	Power Supply Board Ass'y	HB-E303 908	1	
20	Upper Outer Case (WH)	HB-B102 910	1	
21	Thermal Fuse Ass'y	HB-E303 913	1	172°C - 10A with fuse holder
22	Hold Spring	HB-E303 909	1	
23	Heater Holder			
24	Insulator (A)	HB-B102 915	1	
25	Insulator (2) Ass'y	HB-B2 526	1	
26	Heater Ass'y	HB-C202 907	1	120V - 600W
27	Thermo Case Ass'y	HB-B101 906	1	Thermister and case ass'y
28	Thermo Spring Ass'y			
29	Thermo Cover			
30	Stopper Ring			
31	Inner Case Body			
32	Inner Case Bottom			
33	Inner Case Ring	HB-B102 917	1	
34	Mixing Motor Ass'y	HB-E303 910	1	120V - 90W
35	Motor Pulley	HB-A1 034	1	
36	Belt	HB-B2 531	1	
37	Condenser	HB-E303 911	1	14 μ F - 220V AC (With tab terminals)
38	Hold Plate Ass'y	HB-B2 535	1	
39	Pulley	HB-A1 023	1	
40	Washer Ass'y	HB-A1 026	1	

No.	Description	Parts No.	Q'ty	Remarks
41	Shaft Ass'y	HB-A1 022	1	With coupling (lower)
42	Bearing Ass'y (METAL)	HB-B2 536	1	(Bearing ass'y) With bearing
43	Chassis			
44	Power Cord Ass'y	HB-C103 924	1	Polarized edison plug
45	Over Current Fuse	HB-B102 921	1	
46	Serge Killar (Rarista)	RZ-1860MT 113	1	
47	IC1	HB-E303 912	1	μ PD75328GC-739-3B9
48	Relay	HB-B102 923	1	G5CE-1-TP
49	Rubber Paking	HB-B2 540	1	
50	Binding Band	HB-B100 928	10	
51	Casing			
52	Fan Motor	HB-C202 909	1	120V-10W
53	Fan Ass'y	HB-C202 910	1	With C-ring
54	Housing			Parts in market used
55	Motor Lead Ass'y			
56				
57				
58	4×8⊕Pan Head Screw 1 Zn			Parts in market used
59	4×10⊕Truss Head Screw 1 Ni			Parts in market used
60	4×8⊕Pan Head Screw 1 Sus			Parts in market used
61	4×25⊕Truss Head Tap Screw 2 Sus			Parts in market used
62	4×12⊕Truss Head Tap Screw 2 Sus			Parts in market used
63	4×8⊕Pan Head Screw 2 Sus			Parts in market used
64	3×8⊕Pan Head Screw 1 Zn			Parts in market used
65	M4×5⊕Pan Head Screw Zn With Spring Washer			Parts in market used
66	M4×8⊕Truss Head Screw Sus			Parts in market used
67	M4×8⊕Pan Head Tap Screw Zn			Parts in market used
68	4×14⊕Pan Head Screw 2 Zn			Parts in market used
69	4×10⊕Truss Head Screw 2 Zn			Parts in market used
70	4×10⊕Pan Head Screw 2 Sus			Parts in market used
71	4×14⊕Truss Head Screw 2 Sus			Parts in market used
72	4×10⊕Pan Head Screw 2 Zn			Parts in market used

ACTUAL WIRING DIAGRAM



STRUCTURAL DEVELOPMENT DIAGRAM



HITACHI

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HB-E303 NH NO. 105E KASUKABE WORKS.